

WHAT IS CLAIMED IS:

1. A network system which controls communication between a user terminal and a peer terminal
5 thereof over a network including a mobile domain, comprising:

(a) a home agent, coupled to the peer terminal, which maintains the location of the user terminal and tunnels packets for delivery to the user terminal;

10 (b) a foreign agent which detunnels and delivers the packets to the user terminal that is visiting a foreign network;

(c) a service control database which maintains a customizable service profile defining what class of
15 service to provide to the user terminal;

(d) a home server located in a first administrative domain to which the user terminal belongs, comprising:

service profile setting means for retrieving the
20 service profile from said service control database when the user terminal initiates a communication session, and distributing and setting the retrieved service profile to said home agent and foreign agent as an initial service profile, and

25 service profile updating means for generating an event signal when a control condition described in the retrieved service profile is met, obtaining a new service

profile from said service control database in response to the event signal, and distributing the new service profile so as to replace the initial service profile being set in said home agent and foreign agent; and

- 5 (e) a foreign server located in a second administrative domain, which forwards the initial service profile and new service profile from said home server to said foreign agent.

10 2. The network system according to claim 1, wherein said home server generates the event signal for the update of the service profile by detecting at least one of:

- 15 an event related to user authentication,
an event related to authorized use of network resources, and
an event related to accounting functions.

20 3. The network system according to claim 1, further comprising a network control mechanism which informs said home server of an event that is detected therein, while supervising and managing the network.

25 4. The network system according to claim 3, wherein said service profile updating means in said home server obtains and distributes the new service profile in response to the event informed by said network control

mechanism.

5. The network system according to claim 1, wherein said home agent performs route optimization when a packet from the peer terminal is intercepted and tunneled to the user terminal, keeps a record about the peer terminal that has been subjected to the route optimization, and refers to the record to identify the peer terminal when a service profile change request is received from said home server.

6. The network system according to claim 1, wherein said home server allocates said home agent when the user terminal initiates the communication session.

7. The network system according to claim 6, further comprising another foreign agent located within the second administrative domain, and which sends a service profile change request message to the user terminal's previous foreign agent when the user terminal has moved and registered with said another foreign agent.

8. The network system according to claim 6, further comprising:

another foreign server which covers a third administrative domain, and

another foreign agent which is located within the

third administrative domain,

wherein said home server sends a service profile change request message to both the user terminal's previous foreign server and said another foreign server
5 when the user terminal has moved and registered with said another foreign agent.

9. The network system according to claim 1, wherein said foreign server allocates said home agent when
10 the user terminal initiates the communication session.

10. The network system according to claim 9, further comprising another foreign agent which is located within the second administrative domain, and which sends a
15 service profile change request message to the user terminal's previous foreign agent when the user terminal has moved and registered with said another foreign agent.

11. The network system according to claim 9,
20 further comprising:

another foreign server which is located in a third administrative domain, and

another foreign agent which covers another foreign network within the third administrative domain,

25 wherein said home server sends a service profile change request message to both the user terminal's previous foreign server and said another foreign server

when the user terminal has moved and registered with said another foreign agent.

12. The network system according to claim 1,
5 further comprising an address translation server which provides a service using predetermined address translation rules,

wherein said service profile updating means in said home server produces and distributes the new service
10 profile when an event related to the address translation rules occurs during the service.

13. The network system according to claim 1,
further comprising conflict avoiding means for avoiding a
15 conflict between said service profile updating means activated by the event signal detected in said home server and a person who is attempting to modify the service profile stored in said service control database.

20 14. The network system according to claim 13, wherein said conflict avoiding means deactivates the event signal in case of conflict, and after the modification of the service profile is finished, redistributes the service profile and reactivates the event signal.

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~~15.~~ A service control database comprising:
service profile storage means for storing a

customizable service profile defining what class of service to provide to a user terminal; and

service profile management means for managing the service profile stored in said service profile storage
5 means.

~~16.~~ A home server located in an administrative domain to which a user terminal belongs, comprising:

service profile setting means for retrieving a
10 service profile from a service control database when the user terminal initiates a communication session, and distributing and setting the retrieved service profile to network nodes that tunnel and detunnel packets for delivery to the user terminal; and

15 service profile updating means for generating an event signal when a control condition described in the retrieved service profile is met, obtaining a new service profile from said service control database in response to the event signal, and distributing the new service profile
20 so as to replace the initial service profile being set in the network nodes.

~~17.~~ A foreign server located in an administrative domain outside the home location of a user
25 terminal, comprising:

terminal service means for providing the user terminal with administrative service; and

service profile forwarding means for forwarding a service profile to a network node within the same administrative domain.

5 ~~18.~~ A home agent located in an administrative domain to which a user terminal belong, comprising:

peer terminal interface means for interfacing with a peer terminal communicating with the user terminal;

10 tunneling control means for maintaining the location of the user terminal that is visiting a foreign network, and tunneling packets for delivery to the user terminal; and

15 service profile updating means for updating a service profile which defines what class of service to offer to the user terminal.

19. A foreign agent located in an administrative domain outside the home location of a user terminal, comprising:

20 terminal service means for providing the user terminal with administrative service;

detunneling control means for tunneling packets for delivery to the user terminal; and

25 service profile updating means for updating a service profile which defines what class of service to offer to the user terminal.